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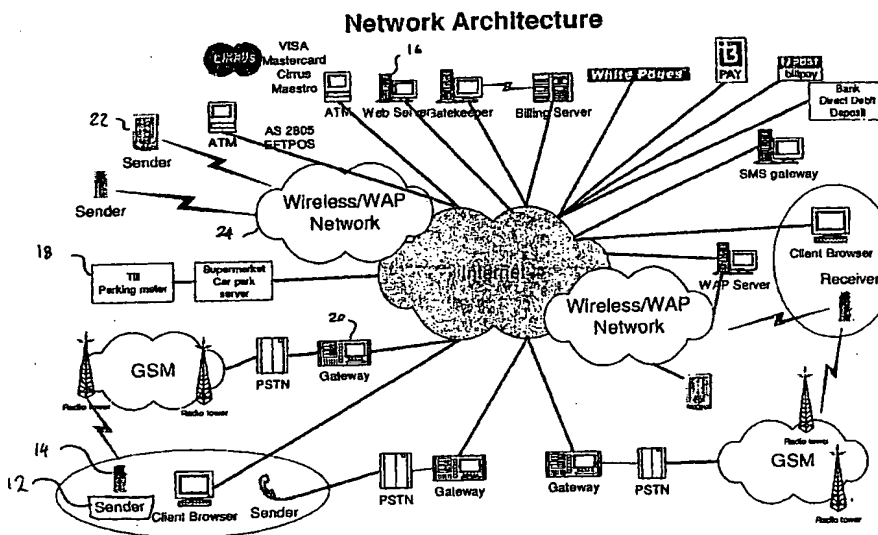
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(54) Title: **A SYSTEM AND METHOD FOR TARGETED DELIVERY OF PROMOTIONAL MATERIAL TO A MOBILE DEVICE**



(57) Abstract: A method of sending targeted advertising to a mobile device including the steps of receiving transaction information produced as a result of a user using a mobile device to conduct a financial transaction to transfer a financial amount to an entity; the transaction information including a mobile device identifier and information enabling identification of the location of the user; selecting promotional material based on the location of the entity; and sending the selected promotional material to the mobile device identified by the mobile device identifier. Information giving an indication of the current location of the user can be obtained and promotional material can be selected on the basis of the users location and be delivered to their mobile device.

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## A SYSTEM AND METHOD FOR TARGETED DELIVERY OF PROMOTIONAL MATERIAL TO A MOBILE DEVICE

### Technical Field

5           This invention relates to a system and method for targeted delivery of promotional material to a mobile device.

### Background to the Invention

10           Operators of mobile communications networks have access to information regarding the use of mobile communications devices on their network. For instance, the GSM cellular telephone network includes a multitude of base stations through which radio connections to the  
15 mobile devices are made. The operator of a GSM network can determine which base station or base stations are being used by particular mobile devices during transmission or reception of data such as when making a telephone call. When a mobile device is in range of a  
20 particular base station it follows that the user of that device is currently located in the geographical area in the vicinity of that base station. This information is valuable to marketing organisations for the purpose of sending targeted promotional material to users of mobile  
25 devices. For instance, if a large department store is in the vicinity of a base station, then when a mobile device is determined to be using that base station a message may be sent to that mobile device advertising the presence of the department store to the user. Because the user is  
30 currently in the vicinity of the department store, the advertising message has an improved chance of causing the user to visit the store.

          Operators of mobile networks do not normally make information concerning the operation of their network  
35 freely available. As a result, marketing organisations cannot determine the locations of users of mobile devices for the purpose of sending targeted advertising material.

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### Summary of the Invention

In a first aspect the present invention provides a method of sending targeted advertising to a mobile device including the steps of:

5 receiving transaction information produced as a result of a user using a mobile device to conduct a financial transaction to transfer a financial amount to an entity, the transaction information including a mobile device

10 identifier and information enabling identification of the location of the user;

selecting promotional material based on the location of the user; and

15 sending the selected promotional material to the mobile device identified by the mobile device identifier.

In this way, information giving an indication of the current location of the user can be obtained and promotional material can be selected on the basis of the users location and be delivered to their mobile device.

20 No access to information regarding the operation of the communications network used by the mobile device is needed.

Preferably, the location of the user is identified based on the location of an outlet associated with the

25 entity.

Preferably, the promotional material selected promotes a business that is located near to the location of the user.

The promotional material may be sent to the mobile

30 device by way of an SMS message.

The promotional material may be sent to the mobile device by way of an MMS message.

The promotional material may be sent to the mobile device by way of a recorded audio message.

35 Preferably, the promotional material is further selected based on the time of day that the promotional material is to be sent.

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Preferably, the mobile device identifier is a mobile telephone number.

In a second aspect the present invention provides a system for sending targeted advertising to a mobile device including:

5 receiving means for receiving transaction information produced as a result of a user using a mobile device to conduct a financial transaction to transfer a financial amount to a recipient entity, the transaction information  
10 including a mobile device identifier and information enabling identification of the location of the user; selection means for selecting promotional material based on the location of the user; and sending means for sending the selected promotional  
15 material to the mobile device identified by the mobile device identifier.

Preferably, the location of the user is identified based on the location of an outlet associated with the entity.

20 Preferably, the selection means selects promotional material that promotes a business that is located near to the location of the entity.

The sending means may send the promotional material to the mobile device by way of an SMS message.

25 The sending means may send the promotional material to the mobile device by way of an MMS message.

The sending means may send the promotional material to the mobile device by way of a recorded audio message.

30 Preferably, selection means further selects the promotional material based on the time of day that the promotional material is to be sent.

Preferably, the mobile device identifier is a mobile telephone number.

35 In a third aspect the present invention provides a computer program arranged to instruct a computing device to operate in accordance with the second aspect of the invention.

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In a fourth aspect the present invention provides a computer readable medium carrying a computer program according to the third aspect of the invention.

## 5    **Brief Description of the Drawings**

An embodiment of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

10    Figure 1 is a schematic diagram depicting the network architecture of a system suitable for conducting financial transactions using mobile communications devices.

## **Detailed Description of the Preferred Embodiment**

15    There follows a description of how a financial transaction may be carried out to pay for parking using a mobile phone as a payment mechanism and how this results in the delivery of targeted promotional material. In this embodiment, people 12 wishing to park their vehicles pay for their parking by making a transaction with their  
20    mobile telephone 14. The operator of the system records parking information obtained from the mobile telephone transactions in a database hosted on a central server 16.

25    The transaction method achieves money transfer using a mobile phone 14 using an analogue or digital mobile phone network such as GSM or GPRS. The payment mechanism is linked to a prepaid rechargeable cash card.

30    A user 12 arrives at a location and they wish to park their car. There is a parking meter 18 at the location. The parking meter displays a notice that indicates that the user 12 can pay for parking with their mobile telephone and provides a telephone number to ring for this purpose.

35

The user 12 dials the telephone number displayed on the parking meter and they are connected to a Voice Over

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IP ("VOIP") gateway 20, which is a server that is connected to the mobile phone network and to the Internet. A GPRS Phone 22 with a WAP browser and menus and will not require any dialing into a gateway, instead the user logs  
5 into a WAP gateway 24, the address of which is indicated on the notice on the parking meter, and enters the information.

The VOIP gateway 20 has Interactive Voice Response  
10 ("IVR") capability and can detect voice and Dual Number Multi-Frequency ("DTMF") tones (some gateways have a speech recognition module in which case information can be spoken instead of entered). Furthermore, the gateway 20 has a Dialed Number Identification Service ("DNIS"), to  
15 identify the number that the user dialed. The gateway can use the number dialed to identify the type of service the user 12 wishes to use and so interact with the user accordingly. So, when the user 12 connects to the gateway 20, the gateway initiates a response to obtain payment  
20 from the user 12 to pay for parking.

When the gateway receives the call from the user's mobile phone, it detects the Caller ID ("CLID") of the mobile phone. The gateway sends the CLID to central server  
25 16 where account information is held in a database. Simultaneously, the gateway prompts the user 12 for the user's Personal Identification Number ("PIN") associated with their prepaid cashcard account. The CLID of the user's mobile phone 14 and the PIN are sent to central  
30 server 16 for authentication of the user.

After authentication of the user, the gateway 20 prompts the user for the car's registration number and the parking meter's identification number, and the bay number  
35 (which is displayed on a notice on the parking meter). The parking meter's identification number may be looked up in a database by central server 16. Looking up of parking

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meter identification number enables identification of an outlet associated with the entity, being the parking meter. The user's location can thus be identified, being the location of the identified parking meter. The parking  
5 meter identification number also allows identification of the entity to whom payment is to be transferred. The user then hears (or see in case of a GPRS phone with a display) the parking meter's identification number, and bay number repeated back to him together with a recording of the name  
10 of the street which will have been looked up by central server 16 based on the parking meter identification number.

The user is then prompted for the amount they wish to  
15 pay, and central server 16 checks the length of parking time that this allows and reads back the amount and the time for confirmation. Finally, the user is asked if any reminder should be sent before expiry of the parking period. The details of the parking are stored in the  
20 central server.

An illustrative example of how the transaction is carried out with Interactive Voice Response follows:

User: (dials into gateway. Has already his car  
25 registration number linked to his account and so does not need to provide this information.)

Gateway: Please enter your PIN.

User: (enters PIN)

Gateway (Pling) The balance of your account is...Please  
30 enter the parking meter id.

User: (enters number).

Gateway: You have entered...Please wait...(Pling) You are located at Berry street, North Sydney. Please enter the bay number.

35 User: (enters number).

Gateway: You have entered...Please enter the amount.

User: (enters number).

Gateway: You have entered..., your parking expires at.... if you want an SMS to be sent 5 minutes before expiry , press 1..."

- 5           In case of WAP/GPRS with display, menus are used for navigation for more convenient operation of the system.

          The location of the user is determined from the parking meter number identified in the transaction  
10   information that is produced as a result of the parking payment transaction.

          The central server stores promotional material in the form of advertisements. This material is on the form of  
15   SMS messages which contain information about various businesses and their goods or services. The central server selects an advertisement relating to a business that is located near to the location of the user. The central server also selects the advertisement based on the  
20   time of day that the advertisement is to be sent to the user. For example, if the time is 6pm the central server may select an advertisement relating to a French restaurant that is in the vicinity of the location of the parking meter. However, had the time been 9am then the  
25   central server may have selected an advertisement relating to a café or coffee shop because at this time of day the user is likely to prefer a cup of coffee to a French meal. Thus, promotional material is selected based on the expected mood of the user at a particular time of day.

30

          If the user makes a purchase at the French restaurant that was promoted to them, the user earns bonus points which are an incentive to opt into such a marketing program or may receive an award of free parking.

35

          Operation of the above system can be used to compile a profile of the behaviour of the user.



The system and method determines the location of the user and uses that information for selecting promotional material.

5

The system and method reduces the costs of advertising to companies, and reduces the costs of the user to get what the user wants by the discounts that are offered.

10

By operation of the above described method an operator of the system receives in a central database information produced as a result of a user using a mobile device in the form of a mobile phone to conduct a financial transaction to transfer a financial amount to a recipient entity being the parking operator. The transaction information includes a mobile device identifier in the form of the mobile phone number of the user. The transaction information includes information that identifies the location of the user in the form of the parking meter identification number. The location of the user is determined by looking up the parking meter identification number in a database to determine the location of that parking meter. Promotional material is selected based on the location of the user and the promotional material is sent to the mobile phone of the user as an SMS message.

In the above described system transaction information is received from a mobile device communication and stored in a central server. The determining means and selection means are embodied in computer software and or hardware. The sending means is embodied in a combination of software and hardware and functions to initiate the sending of data to a mobile communications device through a appropriate communication channels.

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In the above described embodiment payment was made for the parking from a prepaid cashcard account by using a mobile telephone. Similarly, such transactions can be made where the payment comes from a bank account or is  
5 billed to the mobile phone account of the user 12.

In the above described embodiment, the prepaid cashcard account may either be hosted and operated under the control of the operator of the parking enforcement  
10 system or may be hosted and operated by an organisation that is separate to the operator of the parking system.

Whilst the above described system concerned a transaction to pay an entity being a parking operator for  
15 parking, the system is applicable to operate with different types of entities including shops, restaurants and any entity with outlets of fixed location that can be determined by looking up details of that entity or outlet in a database.

20

In the case of an entity being a merchant conducting business through outlets being shops or restaurants, the user dials into a gateway 20 using a telephone number provided by the merchant and enters their PIN. After  
25 validation, the user is prompted to enter the amount and transaction number (which the user receives from the merchant). The transaction number can subsequently be used to identify the merchant. The gateway sends the information to central server 16 which sends a message of  
30 approval to the merchant's server which in turn instructs the till to print a receipt. The central server 16 then sends an SMS to the user with details of the purchase.

An example of a transcript of such a transaction follows:  
35 GATEWAY: Welcome to payment service. Please enter you PIN.  
User: (enters PIN)  
GATEWAY: (Pling) The balance of your account is one zero

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zero dollars. Please enter the transaction number.

User: (enters transaction number)

GATEWAY: You have entered one one one. Please enter the amount.

5 User: (enters amount)

GATEWAY: You have entered one zero zero dollars. Please wait while your payment is processed.

GATEWAY: (Pling) Your payment has been processed. Thank you. You will receive confirmation in a moment.

10

Alternatively, the user gives the merchant his mobile phone number. The merchant dials into a gateway and enters the merchant's PIN. After validation, the merchant enters the user's mobile phone number and amount. The gateway  
15 sends this information to the central server which sends an SMS to the user with an approval code. The user dials into a gateway, and enters the user's PIN. After validation, the gateway informs the user of the pending payment that needs to be released, and asks for the  
20 approval code. The user enters the approval code, and the central server calls the merchant's server to instruct it to ship the goods.

The promotional material may further be selected  
25 based on the nature of a business conducted by the entity. For instance, if the entity is a merchant conducting the business of a record shop then promotional material relating to various recording artists may be selected for transmission to the user.

30

Alternatively, the user can pay the merchant by entering the merchant's telephone number/mobile phone number which the merchant has registered as a business with the service provider.

35

A gateway can have hundreds of different numbers that lead to it, even though the gateway might have only 8

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telephone lines, and the number that the user dials to make a payment to a certain entity can be used to determine the identity of the merchant and to determine which sound prompts should be played by the gateway. The  
5 telephone numbers provided by various merchants may cause a connection to the same gateway. Differing phone numbers allow the gateway to distinguish between merchants and respond according to that merchants requirements.

10 Whilst the methods and systems above send promotional material in the form of an SMS message, recorded audio messages or multimedia MMS messages may similarly be used.

While the above system and method has been described where the mobile communications device is a mobile  
15 telephone, any suitably configured mobile device such as a PDA or pocket PC or laptop with appropriate communications hardware may be used.

Any reference to prior art contained herein is not to be taken as an admission that the information is common  
20 general knowledge, unless otherwise indicated.

Finally, it is to be appreciated that various alterations or additions may be made to the parts previously described without departing from the spirit or ambit of the present invention.

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## CLAIMS:

1. A method of sending targeted advertising to a mobile device including the steps of:
  - 5 receiving transaction information produced as a result of a user using a mobile device to conduct a financial transaction to transfer a financial amount to an entity, the transaction information including a mobile device identifier and information enabling
  - 10 identification of the location of the user;
  - selecting promotional material based on the location of the entity; and
  - 15 sending the selected promotional material to the mobile device identified by the mobile device identifier.
2. A method according to claim 1 wherein the location of the user is identified based on the location of an outlet associated with the entity.
3. A method according to either claim 1 or claim 2
  - 20 wherein the promotional material selected promotes a business that is located near to the location of the entity.
4. A method according to any preceding claim wherein the promotional material is sent to the mobile device by
  - 25 way of an SMS message.
5. A method according to any preceding claim wherein the promotional material is sent to the mobile device by way of an MMS message.
6. A method according to any preceding claim wherein the promotional material is sent to the mobile device by
  - 30 way of a recorded audio message.
7. A method according to any preceding claim wherein the promotional material is further selected based on the time of day that the promotional material is to be
  - 35 sent.
8. A method according to any preceding claim wherein the promotional material is further selected based on the

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- nature of a business conducted by the entity.
9. A method according to any preceding claim wherein the mobile device identifier is a mobile telephone number.
- 5 10. A system for sending targeted advertising to a mobile device including:  
receiving means for receiving transaction information produced as a result of a user using a mobile device to conduct a financial transaction to transfer a  
10 financial amount to a recipient entity, the transaction information including a mobile device identifier and information enabling identification of the location of the user;  
selection means for selecting promotional material  
15 based on the location of the entity; and  
sending means for sending the selected promotional material to the mobile device identified by the mobile device identifier.
11. A system according to claim 10 wherein the location  
20 of the user is identified based on the location of an outlet associated with the entity.
12. A system according to either claim 10 or claim 11 wherein the selection means selects promotional material that promotes a business that is located  
25 near to the location of the entity.
13. A system according to any one of claims 10 to 12 wherein the sending means sends the promotional material to the mobile device by way of an SMS message.
- 30 14. A system according to any one of claims 10 to 13 wherein the sending means sends the promotional material to the mobile device by way of an MMS message.
15. A system according to any one of claims 10 to 14  
35 wherein the sending means sends the promotional material to the mobile device by way of a recorded audio message.

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16. A system according to any one of claims 10 to 15 wherein the selection means further selects the promotional material based on the time of day that the promotional material is to be sent.
- 5 17. A system according to any on of claims 10 to 16 wherein the selection means further selects the promotional material based on the nature of a business conducted by the entity.
- 10 18. A system according to any one of claims 10 to 17 wherein the mobile device identifier is a mobile telephone number.
19. A computer program arranged to instruct a computing device to operate in accordance with a system according to any one of claims 10 to 18.
- 15 20. A computer readable medium carrying a computer program according to claim 19.

Dated this 13th day of September 2002

INTERLINE NETWORKS

20 By their Patent Attorneys  
GRIFFITH HACK

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# Network Architecture

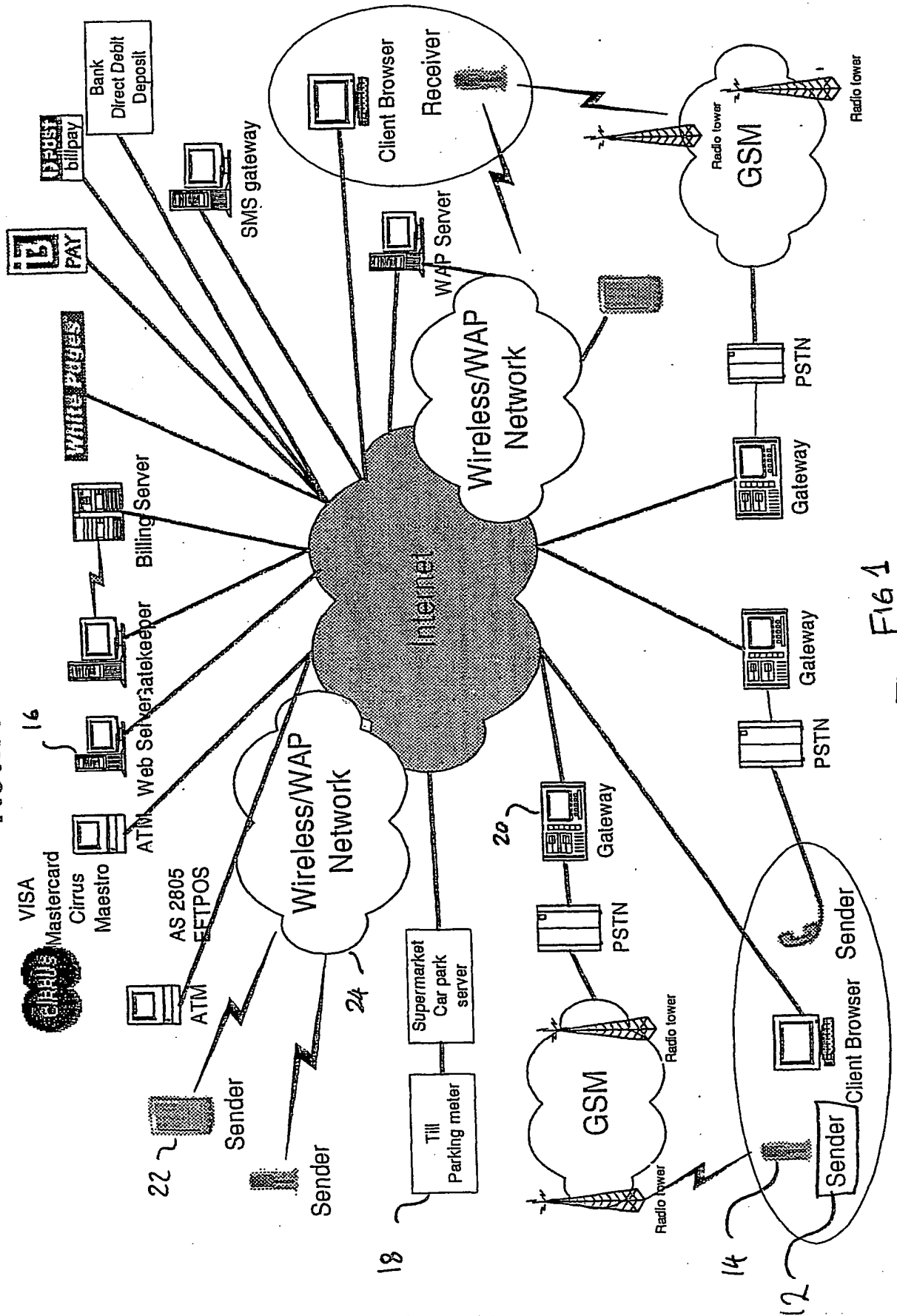


Fig 1

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU02/01271

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
Int. Cl. 7: G06F 17/30; H04Q 7/32; G01S 5/02		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) wpat: mobile, advertising, transaction, location and similar terms		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,Y	JP 2000222331-A-(IBM Corp.) 11 August 2000 & US 6,332,127 whole document	1-20
X,Y	WO 01/08413-A1-(MICROVISION LTD) 1 February 2001 whole document	1-20
Y	WO 01/55982-A1-(FUNDAMO (PROPRIETARY) LIMITED) 2 August 2001 whole document	1-20
NB: WO 01/55982 can be read with either of JP 2000222331 or WO 01/55982		
<input type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>		
Date of the actual completion of the international search 21 October 2002		Date of mailing of the international search report 25 OCT 2002
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer  JAMES WILLIAMS Telephone No : (02) 6283 2599

Form PCT/ISA/210 (second sheet) (July 1998)

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
**PCT/AU02/01271**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO	200108413	AU	200059541	GB	2358756
WO	200155982	AU	200126996	AU	200128728
		AU	200130427	AU	200130428
		WO	200155921	WO	200155981
JP	2000222331	US	6332127	END OF ANNEX	